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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,430	BURROUGHS, BRANDON STUART	
	Examiner	Art Unit	
	Jeff Piziali	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-20* is/are pending in the application.

4a) Of the above claim(s) *3 and 12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8,10,11 and 13-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description: "***a lower member housing 165***" (see Page 3, Lines 8-9). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2, 4-8, 10, 11, and 13-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claim 1 recites the subject matter, "***the keyboard configured for use with thumbs of a user***" (in line 5). Independent claim 10 also recites the subject matter, "***the keyboard configured for use with thumbs of a user***" (in line 5). Independent claim 16 recites the subject matter, "***providing a thumb keyboard***" (in line 6).

Although the instant specification speaks to the matter of *keyboards designed for thumb-based data entry*, there exists no enabling disclosure for any specific structural arrangement which results in such a "***thumb keyboard***" being differentiated in any meaningful way from a standard keyboard. One having ordinary skill in the art would appreciate that there is nothing hindering a user of the instant invention from typing on the disclosed keyboard with their other fingers.

5. Claims 2, 4-8, 11, 13-15, and 17-20 are rejected under 35 U.S.C. 112, first paragraph, as being dependent upon rejected base claims.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 2, 4-8, 10, 11, and 13-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The term "***the keyboard configured for use with thumbs of a user***" in claim 1 (in line 5) is a relative term which renders the claim indefinite. The term "***configured for use with thumbs of a user***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to one having ordinary skill in the art what specific structural arrangement separates a conventional keyboard from a "***keyboard configured for use with thumbs of a user***".

9. The term "***substantially rectangular numeric keypad***" in claim 1 (in line 16) is a relative term which renders the claim indefinite. The term "***substantially rectangular***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how close the "***numeric keypad***" must resemble a rectangle before it would constitute being "***substantially rectangular***".

10. Claim 1 recites the limitations: "***centered***" (in line 18); "***opposite***" (in line 27); and "***closer***" (twice in line 28). There is insufficient antecedent basis for these limitations in the claim.

It would be unclear to one having ordinary skill in the art what the "phone number input keys" are "***centered***" relative to. "***Centered***" relative to what element(s)?

It would be unclear to one having ordinary skill in the art what the "open end" is "***opposite***" to. "***Opposite***" what element(s)?

It would be unclear to one having ordinary skill in the art what both "***closer***" terms are being compared to. "***Closer***" than what element(s)?

11. The term "***the keyboard configured for use with thumbs of a user***" in claim 10 (in line 5) is a relative term which renders the claim indefinite. The term "***configured for use with thumbs of a user***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to one having ordinary skill in the art what specific structural arrangement separates a conventional keyboard from a "***keyboard configured for use with thumbs of a user***".

12. The term "***substantially rectangular numeric keypad***" in claim 10 (in line 14) is a relative term which renders the claim indefinite. The term "***substantially rectangular***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how close the "***numeric keypad***" must resemble a rectangle before it would constitute being "***substantially rectangular***".

13. Claim 10 recites the limitations: "***opposite***" (in line 14); "***centered***" (in line 16); "***closer***" (in line 20); and "***closer***" (in line 21). There is insufficient antecedent basis for these limitations in the claim.

It would be unclear to one having ordinary skill in the art what the "open end" is "***opposite***" to. "***Opposite***" to what element(s)?

It would be unclear to one having ordinary skill in the art what the "phone numbers" are "***centered***" relative to. "***Centered***" relative to what element(s)?

It would be unclear to one having ordinary skill in the art what both "***closer***" terms are being compared to. "***Closer***" than what element(s)?

14. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationships results from the subject matter, "***a keyboard***" (in line 1) and "***a thumb keyboard***" (in line 6). It would be unclear to one having ordinary skill in the art whether there is a single, identical "***keyboard***" being claimed; or rather whether there are plural distinct and independent "***keyboards***" being claimed.

An omitted structural cooperative relationships results from the subject matter, "***a clam shell mobile phone***" (in line 1) and "***a mobile phone***" (in line 6). It would be unclear to one having ordinary skill in the art whether there is a single, identical "***phone***" being claimed; or rather whether there are plural distinct and independent "***phones***" being claimed.

An omitted structural cooperative relationships results from the subject matter, "***a display***" (in line 3) and "***a display***" (in line 7). It would be unclear to one having ordinary skill in the art whether there is a single, identical "***display***" being claimed; or rather whether there are plural distinct and independent "***displays***" being claimed.

The lack of a grammatical article (such as "***a***" or "***a plurality of***" or "***the***" or "***said***") preceding the limitation "***information***" (in lines 23 and 25) renders it unclear whether the claim is establishing a new element; or instead referring back to some preestablished limitation. For example, it would be unclear to an artisan whether a single element of "***information***" is being claimed; or rather whether a plurality of "***information***" elements are being claimed. It would be unclear to one having ordinary skill in the art whether there is a single, identical element/set of "***information***" being claimed; or rather whether there are plural distinct and independent elements/sets of "***information***" being claimed.

15. The term "***a thumb keyboard***" claim 16 (in line 6) is a relative term which renders the claim indefinite. The term "***thumb keyboard***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to one having ordinary skill in the art what specific structural arrangement separates a conventional keyboard from a "***thumb keyboard***".

16. Claim 16 recites the limitations: "***opposite***" (in line 15); "***centered***" (in line 17); "***closer***" (in line 21); and "***closer***" (in line 22). There is insufficient antecedent basis for these limitations in the claim.

It would be unclear to one having ordinary skill in the art what the "open end" is "***opposite***" to. "***Opposite***" to what element(s)?

It would be unclear to one having ordinary skill in the art what the "phone numbers" are "***centered***" relative to. "***Centered***" relative to what element(s)?

It would be unclear to one having ordinary skill in the art what both "***closer***" terms are being compared to. "***Closer***" than what element(s)?

17. The term "***substantially rectangular numeric keypad***" in claim 16 (in line 15) is a relative term which renders the claim indefinite. The term "***substantially rectangular***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear precisely how close the "***numeric keypad***" must resemble a rectangle before it would constitute being "***substantially rectangular***".

18. Claim 16 recites the limitation "***the handheld electronic device***" in line 24. There is insufficient antecedent basis for this limitation in the claim.

19. Claims 2, 4-8, 11, 13-15, and 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon rejected base claims.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

21. Claims 1, 4-8, 10, and 13-16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by ***Kim (US 2003/0222853 A1)***.

Regarding claim 1, Kim discloses a keyboard [Fig. 2; 120] for a clam shell mobile phone, the clam shell mobile phone including an upper phone member [Fig. 2; 200] with a display [Fig. 2; 210], a lower phone member [Fig. 2; 100] with the keyboard, and a pivoting mechanism [Fig. 2; 300] pivotally attaching the upper phone member to the lower phone member for pivoting the clam shell mobile phone between an open position and a closed position, the keyboard configured for use with thumbs of a user and comprising: a left set [Fig. 2; upper-left oval key & 123] of one or more rows of input keys and a right set [Fig. 2; upper-right oval key & 124] of one or more rows of input keys separated by a centerline, the left set of one or more rows of input keys including a top row [Fig. 2; upper-left oval key & 123] with a right-most key [Fig. 2; 123], the right set of one or more rows of input keys including a top row [Fig. 2; upper-right oval key & 124] with a left-most key [Fig. 2; 124], and the right-most key of the top row of the left set of one or more rows of input keys being immediately adjacent to the left-most key of the top

row of the right set of one or more rows of input keys, the left set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the left of the centerline, and the right set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the right of the centerline; and a substantially rectangular numeric keypad [Fig. 2; 110] including a plurality of phone number input keys [Fig. 2; 1, 2, 3, 4, 5, 6, 7, 8, 9, *, 0, #] that together are arranged in a rectangular configuration for entering phone numbers centered below, and distinct from, the left and right sets of one or more rows of input keys, wherein the left set of one or more rows of input keys and the right set of one or more rows of input keys are sandwiched between the display and the substantially rectangular numeric keypad, wherein each row of the one or more rows of each set include a left-most input key [Fig. 2; upper-left oval key & 124] and a right-most input key [Fig. 2; upper-right oval key & 123], the left set of one or more rows are opposite the right set of one or more rows, and lines drawn through the left-most input key and the right most input key of opposite rows intersect the centerline at one or more points adjacent to the left-most input key and the right most input key to form a V shape with a vertex intersecting the centerline and an opposite open end, the open end of the V shape directed towards and closer to the display and the vertex directed towards and closer to the numeric keypad when the clam shell mobile phone is in the open position (see Fig. 2; Page 2, Paragraphs 31-37).

Regarding claim 4, Kim discloses the one or more respective arc centers of the left set of one or more rows of input keys are concentric and the one or more respective arc centers of the right set of one or more rows of input keys are concentric (see Fig. 2; Page 2, Paragraphs 31-37).

Regarding claim 5, Kim discloses the one or more respective arc centers of the left set of one or more rows of input keys are collinear and the one or more respective arc centers of the right set of one or more rows of input keys are collinear (see Fig. 2; Page 2, Paragraphs 31-37).

Regarding claim 6, Kim discloses the one or more respective arc centers of the left set of one or more rows of input keys are collinear and located in at least one of a vertical line and a horizontal line and the one or more respective arc centers of the right set of one or more rows of input keys are collinear and located in at least one of a vertical line and a horizontal line (see Fig. 2; Page 2, Paragraphs 31-37).

Regarding claim 7, Kim discloses the respective arcs of the left set of one or more rows of input keys and the respective arcs of the right set of one or more rows of input keys include radii of curvature between 10 mm and infinity (see Fig. 2; Page 2, Paragraphs 31-37).

Regarding claim 8, Kim discloses the arcs of the left set of one or more rows of input keys and the arcs of the right set of one or more rows of input keys form respective angles between 0 and 90 degrees with respect to the centerline (see Fig. 2; Page 2, Paragraphs 31-37).

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 8.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 15, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claim 8.

Regarding claim 19, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claim 7.

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 1, 2, 4-8, 10, 11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Makela et al (US 6,047,196 A)***.

Regarding claim 1, Makela discloses a keyboard [Fig. 2; 8] for a mobile phone [Fig. 2; 4], the mobile phone including an upper phone member with a display [Fig. 2; 9], a lower phone

member with the keyboard, the keyboard configured for use with thumbs of a user and comprising: a left set [Fig. 2; upper-left oval key, middle-left circular key, and lower-left oval key] of one or more rows of input keys and a right set [Fig. 2; upper-right oval key, middle-right circular key, and lower-right oval key] of one or more rows of input keys separated by a centerline, the left set of one or more rows of input keys including a top row [Fig. 2; upper-left oval key, middle-left circular key, and lower-left oval key] with a right-most key [Fig. 2; lower-left oval key], the right set of one or more rows of input keys including a top row [Fig. 2; upper-right oval key, middle-right circular key, and lower-right oval key] with a left-most key [Fig. 2;lower-right oval key], and the right-most key of the top row of the left set of one or more rows of input keys being immediately adjacent to the left-most key of the top row of the right set of one or more rows of input keys, the left set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the left of the centerline, and the right set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the right of the centerline; and a substantially rectangular numeric keypad [Fig. 2; 7] including a plurality of phone number input keys that together are arranged in a rectangular configuration for entering phone numbers centered below, and distinct from, the left and right sets of one or more rows of input keys, wherein the left set of one or more rows of input keys and the right set of one or more rows of input keys are sandwiched between the display and the substantially rectangular numeric keypad, wherein each row of the one or more rows of each set include a left-most input key [Fig. 2; upper-left oval key and lower-right oval key] and a right-most input key [Fig. 2; upper-right oval key and lower-left oval key], the left set of one or more rows are opposite the right set of one or

more rows, and lines drawn through the left-most input key and the right most input key of opposite rows intersect the centerline at one or more points adjacent to the left-most input key and the right most input key to form a V shape with a vertex intersecting the centerline and an opposite open end, the open end of the V shape directed towards and closer to the display and the vertex directed towards and closer to the numeric keypad when the mobile phone is in the open position (see Fig. 2; Column 3, Lines 14-56).

Makela does not disclose this mobile phone embodiment being a clam shell mobile phone. However Makela discloses numerous inventive embodiments of a clam shell mobile phone [e.g., Fig. 1; 1 and Fig. 3; 4] including a pivoting mechanism [e.g., Figs. 1 and 3; the illustrated hinges] pivotally attaching the upper phone member to the lower phone member for pivoting the clam shell mobile phone between an open position [Figs. 1-3] and a closed position [Fig. 6] (see Column 2, Lines 42-64 and Column 3, Lines 38-56).

It would have been obvious to one having ordinary skill in the art at the time of invention to use Makela's clam shell mobile phone design with the keyboard arrangement illustrated in the Figure 2 embodiment, so as to give the phone a smaller footprint and protect the display and keyboard from inadvertent physical contact when in the closed position.

Regarding claim 2, Makela does not disclose the Figure 2 mobile phone embodiment having a QWERTY keyboard layout. However Makela discloses another mobile phone embodiment having a QWERTY keyboard layout [Fig. 3; 15] (see Column 3, Lines 38 - Column 5, Line 3).

It would have been obvious to one having ordinary skill in the art at the time of invention to use Makela's QWERTY keyboard layout [Fig. 3; 15] as Makela's keyboard [Fig. 2; 8], so the user can control the device without learning a new key order (see Column 3, Line 67).

Regarding claim 4, Makela discloses the one or more respective arc centers of the left set of one or more rows of input keys are concentric and the one or more respective arc centers of the right set of one or more rows of input keys are concentric (see Fig. 2; Column 3, Lines 14-56).

Regarding claim 5, Makela discloses the one or more respective arc centers of the left set of one or more rows of input keys are collinear and the one or more respective arc centers of the right set of one or more rows of input keys are collinear (see Fig. 2; Column 3, Lines 14-56).

Regarding claim 6, Makela discloses the one or more respective arc centers of the left set of one or more rows of input keys are collinear and located in at least one of a vertical line and a horizontal line and the one or more respective arc centers of the right set of one or more rows of input keys are collinear and located in at least one of a vertical line and a horizontal line (see Fig. 2; Column 3, Lines 14-56).

Regarding claim 7, Makela discloses the respective arcs of the left set of one or more rows of input keys and the respective arcs of the right set of one or more rows of input keys include radii of curvature between 10 mm and infinity (see Fig. 2; Column 3, Lines 14-56).

Regarding claim 8, Makela discloses the arcs of the left set of one or more rows of input keys and the arcs of the right set of one or more rows of input keys form respective angles between 0 and 90 degrees with respect to the centerline (see Fig. 2; Column 3, Lines 14-56).

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 11, this claim is rejected by the reasoning applied in rejecting claim 2.

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 8.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 15, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 17, this claim is rejected by the reasoning applied in rejecting claim 2.

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claim 8.

Regarding claim 19, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claim 7.

24. Claims 1, 2, 4-8, 10, 11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Makela et al (US 6,047,196 A)*** in view of ***Hughes et al (US 5,754,655 A)*** and ***Kang (US 2003/0063070 A1)***.

Regarding claim 1, Makela discloses a keyboard [Fig. 3; 15] for a clam shell mobile phone [Fig. 3; 15], the mobile phone including an upper phone member [Fig. 3; 10] with a display [Fig. 3; 12], a lower phone member [Fig. 3; 11] with the keyboard, and a pivoting mechanism [Figs. 3 & 6; the illustrated hinges] pivotally attaching the upper phone member to the lower phone member for pivoting the clam shell mobile phone between an open position [Fig. 3] and a closed position [Fig. 6], the keyboard configured for use with thumbs of a user (see Column 3, Line 38 - Column 5, Line 3).

In this inventive embodiment, Makela does not expressly disclose that the QWERTY keyboard layout forms a V-shape and is sandwiched between the display and a substantially rectangular numeric keypad, as instantly claimed.

However, Hughes discloses a keyboard [Fig. 11; 14] for a mobile phone [Fig. 11; 310 & Fig.13; 402 & 404] including a display [Fig. 11; 12], the keyboard configured for use with thumbs of a user and comprising: a left set of one or more rows of input keys [Fig. 11; Q, A, Z] and a right set of one or more rows of input keys [Fig. 11; P, L, M] separated by a centerline [Fig. 11; vertical line dividing the device 300 in half], the left set of one or more rows of input keys including a top row [Fig. 11; Q, W E, R, T] with a right-most key [Fig. 11; T], the right set

of one or more rows of input keys including a top row [Fig. 11; Y, U, I, O, P] with a left-most key [Fig. 11; Y], and the right-most key of the top row of the left set of one or more rows of input keys being immediately adjacent to the left-most key of the top row of the right set of one or more rows of input keys, the left set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the left of the centerline, and the right set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the right of the centerline; and a substantially rectangular numeric keypad [Fig. 11; 16] including a plurality of phone number input keys [Fig. 11; 0-9] that together are arranged in a rectangular configuration for entering phone numbers centered below, and distinct from, the left and right sets of one or more rows of input keys, wherein the left set of one or more rows of input keys and the right set of one or more rows of input keys are sandwiched between the display and the substantially rectangular numeric keypad (see Column 9, Lines 8-51).

Even still, neither Makela nor Hughes expressly disclose that their respective QWERTY keyboard layouts form a V-shape, as instantly claimed.

However, Kang discloses a QWERTY keyboard layout [Fig. 3; 32] (see Fig. 5; Page 1, Paragraph 15) for use with thumbs of a user and comprising: a left set [Fig. 3; 8] of one or more rows of input keys and a right set [Fig. 3; 6] of one or more rows of input keys separated by a centerline [Fig. 3; 9], the left set of one or more rows of input keys including a top row [Fig. 3; top left row] with a right-most key [Fig. 3; right-most key on the top left row], the right set of one or more rows of input keys including a top row [Fig. 3; top right row] with a left-most key [Fig. 3; left-most key on the top right row], and the right-most key of the top row of the left set

of one or more rows of input keys being immediately adjacent [Fig. 3; at 12] to the left-most key of the top row of the right set of one or more rows of input keys, the left set of one or more rows of input keys arranged in one or more respective arcs [Fig. 3; 40] having one or more respective arc centers located to the left of the centerline, and the right set of one or more rows of input keys arranged in one or more respective arcs having one or more respective arc centers located to the right of the centerline; wherein each row of the one or more rows of each set include a left-most input key and a right-most input key, the left set of one or more rows are opposite the right set of one or more rows, and lines drawn through the left-most input key and the right most input key of opposite rows intersect the centerline at one or more points adjacent to the left-most input key and the right most input key to form a V shape with a vertex intersecting the centerline and an opposite open end, the open end of the V shape directed towards and closer to the display and the vertex directed towards and closer to the numeric keypad when the mobile phone device is in the open position (see Page 2, Paragraphs 16-17 and Page 2, Paragraphs 20-21).

Makela, Hughes, and Kang are all analogous art, because they are from the shared inventive field of keyboards for mobile phone devices. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to combine Kang's "*V-shaped QWERTY keyboard*" (which is optimized for use by the thumbs) with Hughes' "*display + QWERTY keyboard + numeric keypad*" arrangement (which provides a specialized numeric keypad for streamlined number entry) and with Makela's clam shell mobile phone (which gives the phone a smaller footprint while protecting the display and keyboard from inadvertent physical contact when in the closed position).

Secondly, it would have been obvious to one of ordinary skill in the art at the time of invention because all the claimed elements were known in the prior art and one skilled in the art could have combined the keyboard elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Thirdly, it would have been obvious to one of ordinary skill in the art at the time of invention, because the substitution of one known keyboard arrangement for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Fourthly, it would have been obvious to one of ordinary skill in the art at the time of invention , because the technique for improving this particular class of keyboard device was part of the ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

Fifthly, it would have been obvious to one of ordinary skill in the art at the time of invention, because this particular known keyboard arrangement technique was recognized as part of the ordinary capabilities of one skilled in the art.

Sixthly, it would have been obvious to one of ordinary skill in the art at the time of invention, because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

Seventhly, it would have been obvious to one of ordinary skill in the art at the time of invention, because design incentives or market forces provided a reason to make a keyboard

adaptation, and the invention resulted from application of the prior knowledge in a predictable manner.

Regarding claim 2, Makela discloses the mobile phone having a QWERTY keyboard layout [Fig. 3; 15] (see Column 3, Lines 38 - Column 5, Line 3).

Regarding claim 4, Kang discloses the one or more respective arc centers of the left set of one or more rows of input keys are concentric and the one or more respective arc centers of the right set of one or more rows of input keys are concentric (see Fig. 3; Page 2, Paragraphs 16-17).

Regarding claim 5, Kang discloses the one or more respective arc centers of the left set of one or more rows of input keys are collinear and the one or more respective arc centers of the right set of one or more rows of input keys are collinear (see Fig. 3; Page 2, Paragraphs 16-17).

Regarding claim 6, Kang discloses the one or more respective arc centers of the left set of one or more rows of input keys are collinear and located in at least one of a vertical line and a horizontal line and the one or more respective arc centers of the right set of one or more rows of input keys are collinear and located in at least one of a vertical line and a horizontal line (see Fig. 3; Page 2, Paragraphs 16-17).

Regarding claim 7, Kang discloses the respective arcs of the left set of one or more rows of input keys and the respective arcs of the right set of one or more rows of input keys include radii of curvature between 10 mm and infinity (see Fig. 3; Page 2, Paragraphs 16-17).

Regarding claim 8, Kang discloses the arcs of the left set of one or more rows of input keys and the arcs of the right set of one or more rows of input keys form respective angles between 0 and 90 degrees with respect to the centerline (see Fig. 3; Page 2, Paragraphs 16-17).

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 11, this claim is rejected by the reasoning applied in rejecting claim 2.

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 8.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 15, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 17, this claim is rejected by the reasoning applied in rejecting claim 2.

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claim 8.

Regarding claim 19, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claim 7.

Response to Arguments

25. Applicant's arguments filed 11 February 2008 have been fully considered but they are not persuasive.

26. Applicant's arguments with respect to claims 1, 2, 4-8, 10, 11, and 13-20 have been considered but are moot in view of the new grounds of rejection.

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The documents listed on the attached '*Notice of References Cited*' are cited to further evidence the state of the art pertaining to keyboards.

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/
Primary Examiner, Art Unit 2629
5 May 2008